

WHAT IS CLAIMED IS:

1. A method for manufacturing a metal-oxide-semiconductor transistor, comprising:

5 forming a metal thin film and an isolation oxidation film on a semiconductor substrate, and selectively etching the isolation oxidation film such that the isolation oxidation film is left remaining only over a field oxidation film;

heat treating the semiconductor substrate to form silicide by the metal thin film in gate, source, and drain regions;

10 removing portions of the metal thin film that is not formed into silicide, that is, removing unreacted metal thin film;

removing the isolation oxidation film left remaining on the field oxidation film; and

15 heat treating the semiconductor substrate in an oxygen environment to form the unreacted metal thin film remaining on the field oxidation film into a metal oxidation film.

2. The method of claim 1, wherein the metal thin film is formed by depositing a metal such as titanium and cobalt to a thickness of 300~500 Å.

3. The method of claim 1, wherein the silicide is formed by performing rapid thermal processing of the metal thin film in a nitrogen environment, at a temperature 20 of 700~800°C, and for 20~40 seconds.

4. The method of claim 1, wherein following the formation of the metal oxidation film, rapid thermal processing is performed in a nitrogen environment, at a temperature of 850~950°C, and for 15~15 seconds.

5. The method of claim 1, wherein the isolation oxidation film is formed by

performing deposition to a thickness of 800~1200 Å using plasma enhanced chemical vapor deposition.

6. The method of claim 1, wherein the metal oxidation film is formed by performing rapid thermal processing in an oxygen environment, at a temperature of 5 700~800°C, and for 20~40 seconds.

7. A semiconductor device, comprising:
a semiconductor substrate having a device separation region formed by a field oxidation film;

10 a metal-oxide-semiconductor transistor including a gate, a source, and a drain, the metal-oxide-semiconductor transistor being provided in a device region of the semiconductor substrate;

an insulating film formed on the semiconductor substrate and including contact holes that expose portions of the gate, source, and drain;

15 silicide formed on the metal-oxide-semiconductor transistor to reduce contact resistances of the gate, source, and drain;

an isolation oxidation film formed over the gate and field oxidation film; and a metal oxidation film formed between the field oxidation film and the isolation oxidation film.

8. The semiconductor device of claim 7, wherein the silicide is formed of a 20 metal such as titanium and cobalt.

9. The semiconductor device of claim 8, wherein the silicide is formed to a thickness of 300~500 Å.

10. The semiconductor device of claim 7, wherein the metal oxidation film is formed of a metal such as titanium and cobalt.

11. The semiconductor device of claim 10, wherein the metal oxidation film is formed to a thickness of 300~500Å.

12. The semiconductor device of claim 7, wherein the isolation oxidation film is formed to a thickness of 800~1200Å.